

The Logistics Management Information System Assessment Guidelines



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Logistics Management Information System Assessment Guidelines

Purpose

A logistics management information system (LMIS) assessment identifies differences between the way a program's LMIS should work and how it actually works. Problems and their possible causes are analyzed to distinguish those related to LMIS from other issues. Once the causes of LMIS problems are identified, solutions can be recommended.

These guidelines are intended as a comprehensive general reference for field advisors conducting LMIS assessments. In some instances, the advisor will be familiar with the system being assessed and may already know the answers to many of the questions. The questions and checklists presented here should be condensed or adapted based on what is and is not known and on the scope of the assessment trip.

Use of these guidelines should not be limited to formal LMIS assessment visits. Most logistics technical assistance—commodity requirements estimation, distribution systems design, performance improvement assessment, or any other intervention—requires an understanding of the design and functioning of the LMIS.

Strategy

The job of the advisor is to assess the functionality of the LMIS, identify the problems in its operations, and propose solutions. LMIS problems can be divided into three basic types—

Design	Does the LMIS collect and report the essential data items for logistics management?
Operation	Are reporting procedures followed; do the data flow in a timely fashion?
Use	Are managers throughout the program actually using LMIS data for decision making?

Using the framework in this guideline, you work through five steps to answer these questions—

- ☐ What are the logistics system's problems?
- ☐ Which of the logistics problems are caused by the LMIS?
- ☐ Are the LMIS problems *design* problems, *operation* problems, or *use* problems?
- ☐ What are the solutions to the identified LMIS problems?

The steps are—

1. Outline the logistics system.
2. Outline the design of the current LMIS as it exists on paper.
3. Identify design problems.
4. Assess functionality of the logistics system and the actual LMIS in the field.
5. Identify logistics system problems with LMIS causes and recommend solutions.

The tasks involved in completing the first three steps typically can be accomplished in the national capital. The fourth step requires travel outside the capital city. The last step is analytical (based on the first four) and can be completed anywhere.

Steps

Outline the Logistics System

To assess an LMIS, you first must understand the logistics system it serves. For example, you cannot evaluate the reporting feedback loop without knowing whether the distribution system is a “push” or a “pull” system. Other elements of the logistics system essential to understanding the LMIS include—

- ☐ Whether the distribution system is vertical (i.e., responsible only for family planning commodities) or integrated (i.e., responsible for other primary health care commodities as well).
- ☐ Sources of supply.
- ☐ Products distributed.
- ☐ Number of levels in the system.
- ☐ Number and types of facilities at each level.
- ☐ Types of service delivery points—clinic, community-based distribution (CBD), others.
- ☐ Storage capacities and constraints.
- ☐ Type of inventory control system.
- ☐ Maximum and minimum stock levels.
- ☐ Periodicity of orders and deliveries.
- ☐ Lead times.
- ☐ Transport modes/mechanisms (how products are moved between facilities).
- ☐ Management/supervision structure of the distribution system.

Outline the Current LMIS Design As It Exists on Paper

In many cases, the LMIS design is very good on paper, but the official procedures are not followed (or not followed uniformly) in the field. Step 2 requires you to interview central-level logistics managers and review all forms, manuals, and guidelines to ascertain what the *de jure* LMIS looks like and how it is supposed to work. If this information is not available at the central level, you may be able to infer the intended LMIS design from observations at lower levels. This step helps you determine whether the LMIS suffers from *design* problems, as opposed to *operation* or *use* problems.

At minimum, you need to determine the following—

- ☐ Is there more than one LMIS design for the same program?

- ☐ Is the LMIS supposed to be for family planning only, or is it integrated with LMIS for other primary health care supplies?
- ☐ Is the LMIS intended to stand alone, or is it integrated with other program reporting, such as service statistics or health management information systems (HMIS)?
- ☐ What logistics data are supposed to be collected?
- ☐ What LMIS forms are supposed to be used?
- ☐ How is the reporting cycle supposed to work (reporting interval, data flow, levels at which data are aggregated)?
- ☐ Who is supposed to be responsible for collecting, reporting, and processing the data? Who is supposed to be responsible for overseeing these activities?
- ☐ Are the commodity reordering and data reporting systems the same or different (i.e., are the people who collect, report, and process LMIS data the same staff who actually order and issue supplies)?
- ☐ What logistics management decisions are supposed to be made with the LMIS data, and who is supposed to make them? How often, and when, are these decisions supposed to be made?

Identify Design Problems

After outlining the design of the current LMIS, you should be able to identify obvious/serious design constraints. Areas to consider include—

- ☐ Are the essential logistics data being collected (beginning and ending balances, quantities received, quantities issued, quantities distributed to clients, consumption, lead time, losses and adjustments, quantities needed)?
- ☐ Are data that do not serve any management purpose being collected?
- ☐ Is the reporting cycle consistent with timing of decisions that need to be made?
- ☐ Are the forms for collecting and reporting the data well designed, easy to fill out, and easy to aggregate?
- ☐ Do the forms and data collection procedures actually reflect the service delivery and management structures?
- ☐ Are the data being reported consistent with the data being recorded on the primary collection forms?
- ☐ Are there guidelines, systems manuals, and job aids that specify system parameters, such as definition of terms, standard quantities for distribution to clients, reporting periods, report flow, supervision procedures, feedback reports, staff responsibilities, and so forth?

Assess the Functionality of the Logistics System and the Actual LMIS in the Field

It is essential that you obtain systematic, firsthand knowledge of the functioning of the LMIS and the logistics system in the field. This is *the* key step in the assessment; it requires you to make site visits to a representative sample of facilities at all levels in the system. The primary goals of the field assessment are to—

- ☐ Identify the nature and extent of logistics system problems.
- ☐ Assess the design, operation, and use of the LMIS as it is actually implemented in the field.

As a rule of thumb, approximately half of an assessment visit should be spent in the field.

Sample selection. It is important that the sites selected be representative. The sample should be as diverse as possible, including good and bad, urban and rural, accessible and remote, and large and small facilities. The goal is to visit as many different facilities as possible in the allotted time, following each supply chain along its entire length. For example, in a supply chain with central, regional, district, and service delivery point (SDP) levels, you might select two of the regions to investigate, at least two districts in both of the selected regions, and two SDPs in each of the selected districts.

Methodology. Although you can begin at SDPs and track logistics information as it flows up from level to level, protocol usually requires you to begin at the central level and work your way down to SDPs. At each level there are eight steps to be completed—

1. **Records and forms check:** Which LMIS records and forms are being used?
2. **Records and forms review:** Are the records and forms properly maintained and kept up to date?
3. **Crosscheck for data consistency within facilities:** Are the records within this facility consistent with each other? That is, do shipping/receiving records match stock cards? Do stock records match a physical inventory taken at the time of the assessment?
4. **Crosscheck for data consistency between levels:** Do the records in this facility match the corresponding records from the facilities above and below? That is, were shipments sent here from the higher level received and recorded properly? Are shipments from this facility to lower-level facilities it serves recorded properly both here and at the lower-level facilities?
5. **Logistics system performance:** Are the right quantities of the right contraceptives going to the right places at the right time?

6. **Management and supervision structure:** What are the supervision protocols and actual practices at this facility?
7. **Operation:** Do staff understand and follow LMIS guidelines?
8. **Use:** Do managers use the LMIS data to manage the logistics system?

The crosschecks are particularly important. Visiting facilities throughout the length of a single reporting chain will enable you to follow specific logistics data as they move up the system and supplies as they move down. The crosschecks of data between levels, and between the logistics information and the flow of supplies, will highlight shortcomings in operation and use of the LMIS. For example, if you crosscheck the quantities ordered, received, and dispensed to clients at the SDP level against the data the SDP reports up to the next level, and against the quantity issued from the higher level to the SDP, you will be able to evaluate—

- ☐ How order quantities are determined at the SDP.
- ☐ Whether the link between recording and reporting data is functioning.
- ☐ Whether commodity loss/wastage is significant.
- ☐ How orders are verified at the next higher level.
- ☐ Whether there were enough supplies at the next level to fill the orders.

To organize your field assessment findings, you might rate the LMIS from 1 to 4 (where 1 = best performance) at each facility and for the system overall, regarding—

Design

- ___ Collects only essential data.
- ___ Forms and reports are easy to understand and use.
- ___ LMIS structure and parameters support the logistics system design.

Operation

- ___ Knowledge and use of system standards and reporting procedures.
- ___ Completeness of data recording and reporting.
- ___ Timeliness of data recording and reporting.
- ___ Quality and accuracy of reported data.

Use

- ___ Use of data for determining and validating order quantities.
- ___ Use of data for managing and troubleshooting the logistics system.

Such rankings can be used to identify problem facilities and problem components within the logistics system, providing a partial baseline assessment of the distribution system and a focus for future assistance.

Identify Logistics System Problems with LMIS Causes and Recommend Solutions

Having completed the first four steps, you should be able to—

- ☐ Assess any differences between the *de jure* LMIS identified in the capital city and the *de facto* LMIS found in the field.
- ☐ Identify the nature and extent of logistics system problems found at different levels in the pipeline (i.e., overstocking, stockouts, bottlenecks, expired stock).
- ☐ Identify and distinguish among problems with the design, operation, and use of the LMIS, and assess the impact of these problems on the functioning of the logistics system.
- ☐ Recommend solutions to problems with the LMIS design, operation, and use.

Distinguishing between the *de jure* and the *de facto* LMISs not only facilitates your understanding of system problems and interventions required, but also makes it easier to communicate with policymakers who may be unaware of the situation in the field. Going beyond identifying LMIS problems to identify the logistics system consequences of LMIS problems gives weight to your recommendations—information system problems are intangible, but stockouts are not. It is easier for decision makers to commit resources to LMIS interventions when they know that improvements can resolve high-profile problems, such as undersupply or expired stocks. Moreover, putting the LMIS problems in context will help you develop and prioritize strategies for improving the LMIS.

Some problems require design interventions and others require performance improvement interventions. Most require both. Whatever the problem, fixing it will involve not only developing recommendations, but also building a consensus in support of the recommendations among decision makers before attempting to implement them.

Field Assessment Tool

Facility level/type_____

Facility name/location_____

1. Records/Forms Check

Identify LMIS forms and records used—

- ☐ daily activity records
- ☐ inventory control records
- ☐ order forms
- ☐ requisition/issue vouchers
- ☐ stock reports (i.e., quarterly report forms)
- ☐ other types of forms and reports.

Are the forms—

- ☐ well designed and easy to fill out?
- ☐ easy to aggregate to produce reports?
- ☐ available and used uniformly across time and at all facilities?

Records/Forms Review

Review all forms to determine—

- ☐ Are the essential data collected (beginning and ending balances, quantities received, quantities issued, quantities distributed to clients, consumption, lead time, losses and adjustments, quantities needed)?
- ☐ Are the forms filled out properly?
- ☐ Is the math correct?
- ☐ Are the records up to date and complete?

Logistics System Assessment

- ☐ Are contraceptives being supplied at regular intervals?
- ☐ Are facilities receiving the correct mix of contraceptives in the right quantities?
- ☐ Have there been stockouts in the last six months?
- ☐ Have supplies expired in the pipeline?

Management/Supervision Structure

- ☐ Who is responsible for recording, reporting, and processing data?
- ☐ Who is responsible, at each level, for overseeing the recording, processing, and reporting of data?
- ☐ What LMIS supervision takes place? How often?
- ☐ What kind of feedback do they give staff?

Operation

Interview staff responsible for data collection, reporting, and supplies management to determine their knowledge of—

- ☐ data definitions
- ☐ standard quantities to dispense to clients (new versus continuing)
- ☐ how to maintain and fill out records and forms
- ☐ how to aggregate data
- ☐ when to update records
- ☐ when and where to forward reports to and receive reports from.

Use

Interview supervisory/management staff to assess their knowledge of—

- ☐ how to calculate an order quantity
- ☐ how to verify an order
- ☐ how to process an order
- ☐ how to use the data to forecast program needs
- ☐ how to use the data to set and adjust minimum and maximum stock levels
- ☐ how to identify undersupply and oversupply situations and their causes
- ☐ how to identify and rectify incomplete, poor-quality, or slow reporting.

Crosschecks (at one facility)

Compare for data consistency—

- ☐ between inventory record and physical inventory (balance on hand)
- ☐ between inventory record and daily activity register (quantity dispensed to clients)
- ☐ between daily activity register and stock report (quantity dispensed to clients)

- ☐ between inventory record and receipt voucher (quantity received)
- ☐ between quantity ordered and quantity received.

Crosschecks (between levels)

Compare for data consistency—

- ☐ between quantity ordered from the lower level and quantity issued from the higher level
- ☐ between quantity issued from the higher level and quantity received at the lower level
- ☐ between quantity dispensed to clients at the SDP and quantity reported to the higher level as having been dispensed to clients from that SDP.